N° 11,061 A.D. 1898

Date of Application, 14th May, 1898
Complete Specification Left, 14th Feb., 1399—Accepted, 18th Mar., 1899

PROVISIONAL SPECIFICATION.

New Pharmaceutical Compound of Gelatin and Tannin.

I, Charles Denton Abel, of Birkbeck Bank Chambers, Southampton Buildings, in the County of London, Consulting Engineer and Chartered Patent Agent, do hereby declare the nature of this invention (as communicated to me from abroad by The Actien-Gesellschaft für Anilin-Fabrikation, of Berlin, in the German Empire, Chemical Manufacturers) to be as follows:—

It is well known that the compound of gelatin and tannin is putrescible while the corresponding compounds derived from other tannic acids are not.

My foreign correspondents have now discovered that this property is essentially caused by the water retained by the raw precipitate obtained from solutions of gelatin and tannin. Consequently if this water is removed by heating the precipitate up to 100° C. or even for a short time at more elevated temperatures a stable and non-putrescible product is obtained, which can therefore be used for medicinal purposes.

My foreign correspondents have discovered that it may be applied as an astringent acting only in the intestines, as it is insoluble or hardly soluble in the juices of the stomach while it is attacked by the alkaline juices of the intestines.

There is however, another difficulty in obtaining this gelatin tannate in a form proper for medicinal purposes.

As the gelatin tannin precipitate even after the mother lyes having been removed by pressure retains large quantities of water, it melts at relatively low temperature, a viscous and leatherlike mass being formed which it is very difficult to dry completely and to pulverize. By heating the same for a long time on the water bath it is possible to remove the water, but the product obtained in this way is not only strongly coloured but decomposes much more readily than pure gelatin tannate, and assumes a disagreeable taste and smell when heated above 100° C. (for instance in order to sterilize it or to render it even more resistant to the stomach juices).

These inconveniences are specially experienced if larger quantities of gelatin-tannate are dealt with in one operation.

Now my foreign correspondents have discovered that the melting of the raw precipitate may be avoided by allowing the latter to lie in the open air and at ordinary temperature for about 24 hours. Thereby nearly all water is removed and the remaining powder may be completely dried on the water bath without melting. In order to remove the last traces of water it is advisable to dry finally at higher temperatures not exceeding 150° C. The product thus obtained may be pulverized without any difficulty. It is almost colourless and has no taste or smell. Thus it is completely fit for medicinal purposes.

Dated this 14th day of May 1898.

ABEL & IMRAY,
Agents for the Applicant.

[*Price 8d.*]

COMPLETE SPECIFICATION.

New Pharmaceutical Compound of Gelatine and Tannin.

I, CHARLES DENTON ABEL, of Birkbeck Bank Chambers, Southampton Buildings, in the County of London, Consulting Engineer and Chartered Patent Agent, do hereby declare the nature of this invention (as communicated to me from abroad by The Actien-Gesellschaft für Anilin-Fabrikation, of Berlin, in the German Empire, Chemical Manufacturers) and in what manner the same is to be performed to be particularly described and ascertained in and by the following statement;—

It is well known that the compound of gelatine and tannin is putrescible while the corresponding compounds derived from other tannic acids are not.

My foreign correspondents have now discovered that this property is essentially caused by the water retained by the raw precipitate obtained from solutions of gelatine and tannin. Consequently if this water is removed by heating the precipitate up to 100° C. or even for a short time at more elevated temperatures a stable and non-putrescible product is obtained, which can therefore be used for medicinal purposes.

My foreign correspondents have discovered that it may be applied as an astringent acting only in the intestines, as it is insoluble or hardly soluble in the juices of the stomach while it is attacked by the alkaline juices of the intestines.

There is however, another difficulty in obtaining this gelatine tannate in a form proper for medicinal purposes.

As the gelatine tannin precipitate, even after the mother lyes have been removed by pressure, retains large quantities of water, it melts at relatively low temperature, a viscous and leatherlike mass being formed which it is very difficulty to dry completely and to pulverize. By heating the same for a long time on the water bath it is possible to remove the water, but the product obtained in this way is not only strongly coloured but decomposes much more readily than pure gelatine tannate, and assumes a disagreeable taste and smell when heated above 100° C. (for instance in order to sterilize it or to render it even more resistant to the stomach juices).

These inconveniences are specially experienced if larger quantities of gelatine-tannate are dealt with in one operation.

Now my foreign correspondents have discovered that the melting of the raw precipitate may be avoided by allowing the latter to lie in the open air and at ordinary temperature for about 24 hours. Thereby nearly all water is removed and the remaining powder may be completely dried on the water bath without melting.

In order to remove the last traces of water it is advisable to dry finally at higher temperatures not exceeding 150° C. The product thus obtained may be pulverised without any difficulty. It is almost colourless and has no taste or smell. Thus it is completely fit for medicinal purposes.

The following example may illustrate the manufacture of the new product:

The gelatine-tannin precipitate required is produced by adding 200 litres of a 5 *per cent.* solution of tannic acid to 1000 litres of a 1 *per cent.* solution of gelatine while constantly stirring.

It has been found advantageous to use diluted solutions of gelatine and tannin, as the precipitate thus obtained separates in a more powder-like form and can much more easily be freed from the mother lyes, than when it is produced from more concentrated solutions.

The gelatine-tannin precipitate is filtered off, washed repeatedly with water until the excess of tannic acid is removed, and pressed.

The cake obtained is coarsely ground, spread out in thin layers and allowed to dry at low temperature say 25° C. and at ordinary or at reduced pressure, until a sample does not melt when heated on the water bath.

The mass is then ground to a powder and completely dried at 100° C. If desirable the product can finally be sterilised by heating it for several hours at a higher temperature not exceeding 150° C.

Having now particularly described and ascertained the nature of this invention and in what manner the same is to be performed, I declare that what I claim is:—

1. The herein described manufacture of a new pharmaceutical compound of gelatine and tannin applicable as an intestinal astringent, by mixing diluted aqueous solutions of gelatine and tannin, filtering, washing and pressing the precipitate produced, and drying it at ordinary temperature until a sample does not melt when heated on the water bath, and finally drying the product at 100° C. or at a temperature not exceeding 150° C.

2. The new pharmaceutical compound of gelatine and tannin manufactured as herein described.

Dated this 14th day of February 1899.

ABEL & IMRAY,
Agents for the Applicant.

Redhill: Printed for Her Majesty's Stationery Office, by Malcomson & Co., Ltd.—1899.